May 19, 2004

Mr. Timothy A. Jewett
District Engineer II
North Carolina Department of
Environment and Natural Resources
Solid Waste Section
585 Waughtown Street
Winston-Salem, NC 27107-2241

Re: Greensboro Transfer Station Permit Application

Greensboro, North Carolina

HDR Project No. 06770-2707-018

Dear Mr. Jewett:

On behalf of the City of Greensboro, HDR Engineering, Inc. of the Carolinas is pleased to submit two copies of the permit application for the proposed solid waste transfer station for your review.

If you have any questions regarding this, please feel free to contact me at (704) 338-6717.

Sincerely,

Joseph C. Readling, PE VP

Project Manager

JCR/jvd

Enclosures

cc: Greg Dingman, 2 copies

Jeryl Covington, PE, w/o enclosure

GREENSBORO TRANSFER STATION

PERMIT APPLICATION

MAY 2004

Prepared for:



City of Greensboro P.O. Box 3136 Greensboro, NC 27402-3136

Prepared by:



HDR Engineering, Inc. of the Carolinas 128 South Tryon Street, Suite 1400 Charlotte, NC 28202-5004

HDR Project No. 06770-2707-018

TABLE OF CONTENTS

SECTIO	N	PAGE
1.0	DITRODUCTION	
1.0	INTRODUCTION	
	1.1 Purpose	
	1.2 Facility Location	
~ ^	1.3 Facility Description	
2.0	WASTE ACCEPTANCE CRITERIA	
	2.1 Introduction	
	2.2 Recyclable Material	
	2.3 Prohibited Wastes	
3.0	TRANSFER STATION OPERATIONS	
	3.1 Background	
	3.2 Tipping Floor Operations	
4.0	EROSION CONTROL REQUIREMENTS	
	4.1 Introduction	
	4.1.1 Temporary Sediment Traps	
	4.1.2 Temporary Diversion Channels	
	4.1.3 Vegetative Stabilization	
	4.1.4 Silt Fence	
	4.1.5 Temporary Gravel Construction Entrance/Exit	
5.0	DRAINAGE CONTROL AND WATER PROTECTION REQUIREMENTS	
6.0	DISEASE AND VECTOR CONTROL	
7.0	SIGN AND SAFETY REQUIREMENTS	
	7.1 Sign Requirements	
	7.2 Open Burning of Waste	12
	7.3 Fire Protection Equipment	12
	7.4 Notification of Fire	
8.0	ACCESS AND SECURITY REQUIREMENTS	13
	8.1 Transfer Station Access and Security	
	8.2 Attendant	13
	8.3 Access Road	13
FIGUE	RE	
Figure	e 1 Vicinity Map	
i igui c	The first map	
APPE	NDIX AND FACILITY DRAWINGS	
	7ing Annual Latter	
C 04	Zoning Approval Letter	
C-01 C-04	Existing Conditions Site Utilities Plan	
A-01	Transfer Station Exterior Elevations Sheet #1	
A-01 A-02	Transfer Station Exterior Elevations Sheet #2	
A-31	Prefabricated Scalehouse Exterior Elevations	

SECTION 1.0 INTRODUCTION

1.1 PURPOSE

The purpose of this Operations Plan (Plan) is to provide the City of Greensboro (City) Environmental Services Department with a manual that will serve as a guide to safely maintain and operate the City's municipal solid waste (MSW) transfer station. This Plan has been prepared in general accordance with the North Carolina Solid Waste Rules 15A NCAC 13B .0402, Operational Requirements for Transfer Facilities. The Plan also addresses pertinent operational requirements outlined in Rule .0505, Operational Requirements for Sanitary Landfills and will discuss the following issues.

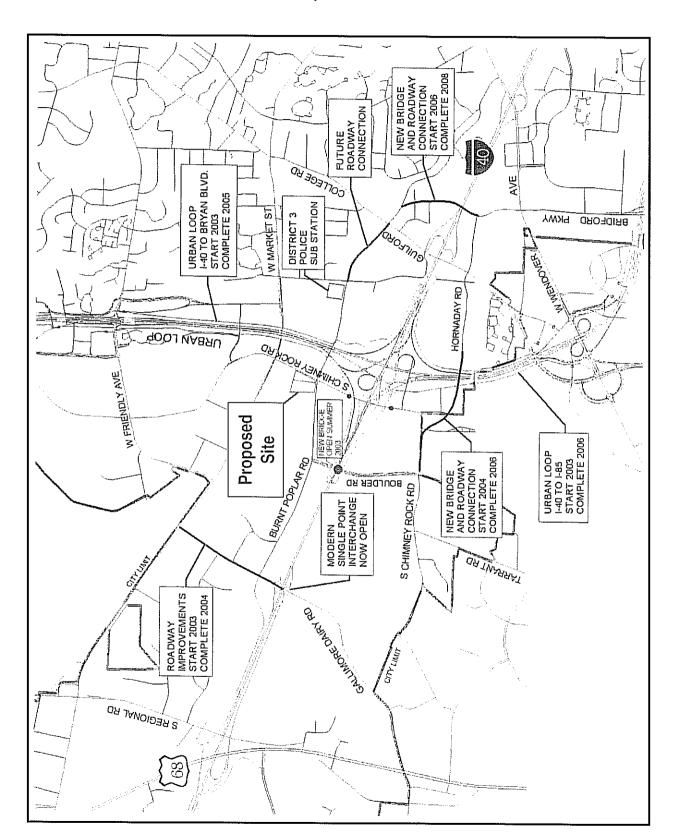
- Waste Acceptance Criteria
- ♦ Facility Operations
- Erosion Control Requirements
- ♦ Drainage Control and Water Protection
- Disease and Vector Control
- Sign and Safety Requirements
- Access and Security Requirements

This transfer station, designated as the Greensboro Transfer Station, will become a part of the City's current integrated waste management system. The transfer station will be developed to provide a mechanism for transferring and transporting MSW generated in the City to an out-of-city permitted MSW landfill currently undesignated. The facility will include the transfer station, scale and scale house system, administrative building, and a citizen's drop off area.

1.2 FACILITY LOCATION

The transfer station site is an approximate 10-acre parcel located on the west side of the City approximately one-half mile north of Interstate 40 at the corner of Burnt Poplar and Chimney Rock Roads. A vicinity map for the transfer station is provided on Figure 1. Primary access to the site will be via Burnt Poplar Road. In order to facilitate anticipated traffic volumes, turn lanes into the site will be required along Burnt Poplar Road. The building site, which includes the tipping floor and administrative building, encompasses approximately 28,000-square feet (0.64 acres) of the 10-acre site. The property was zoned as Heavy Industrial but was rezoned by the City as "Special Use Permit," which is suitable for the development of public facilities including solid waste transfer stations. Refer to zoning letter in the appendix. The mailing address for the transfer facility is 6310 Burnt Poplar Road, Greensboro, North Carolina 27409-9710.

Figure 1 VICINITY MAP Greensboro, North Carolina



The site is located in an industrial area on currently vacant parcel. Limited vegetation exists along the borders to the site; however, the current use of the adjacent property includes tank farms to the north and east, a trucking operation to the south, and vacant industrial property to the west (refer to Drawing C-01, Existing Conditions for further information). The topography of the site slopes from the southeast and northwest to a drainage feature, which traverses the center of the property from east to west. Where possible, the topography has been used to reduce the earthwork, filling, and grading required to produce the grade and elevation changes for the bi-level, direct-dump type of transfer station proposed. Refer to Drawing C-04, Site Utility Plan for the proposed grading of the site.

1.3 FACILITY DESCRIPTION

The transfer station facility will consist of a tipping/administrative building, citizen drop-off area, scale house, and access roads. The transfer station will utilize a bi-level, non-compacted, direct-dump design, consisting of a refuse hopper, and a tipping area on the upper level and a "load-out" area on the lower level. At the entrance to the site, a scaling system will be installed to determine and record facility throughput. This system will consist of inbound and outbound truck scales and a scale house with remote operations equipment.

The operational areas (maneuvering area, tipping floor, and operations/control area) will be enclosed by a pre-engineered metal, panel-type building. The operational areas will be accessed by a roadway system consisting of entrance and exit roads and parking for users of the facility. The access roads will have either an asphalt- or concrete-paved surface. Landscaping will be provided as required to enhance site aesthetics and reduce noise levels.

The transfer station will be capable of transferring approximately 900 tons per day (tpd) of MSW based on an eight-hour operating day. The tipping floor area is sized to accommodate storage of 100 percent of a peak day's refuse.

The City will be the owner and operator of the transfer station. The primary contact person for issues concerning operation of the transfer station will be:

Ms. Jeryl Covington, PE Environmental Services Director City of Greensboro 401 Patton Avenue Greensboro, NC 27406

SECTION 2.0 WASTE ACCEPTANCE CRITERIA

2.1 INTRODUCTION

In accordance with 15A NCAC 13B .0402(1), a waste transfer facility shall only accept those wastes which it is permitted to receive. This transfer station will accept only MSW (i.e., residential, commercial, and industrial) generated within the service area. Based upon recent annual landfill waste disposal records, the City anticipates receiving an annual tonnage rate of approximately 225,000 tons per year (tpy) of MSW at the transfer station. The projected annual tonnage rate yields a daily rate of 725 tons per day (tpd) based upon 312 operating days per year. The daily tonnage rate is subject to change due to fluctuations in the amount of waste delivered to the facility; therefore, the transfer station has been designed to handle a maximum average tonnage rate of 900 tpd to account for daily surges in waste flow. The residential waste will be transported to the transfer facility by City and private hauler vehicles. The residential vehicles will consist primarily of pick-up trucks and cars, while the private hauler vehicles will be of the rear and side loader truck types. Commercial and industrial waste will be primarily transported to the facility by private waste haulers.

2.2 RECYCLABLE MATERIAL

The transfer station will have containers for citizen's drop-off recyclables.

2.3 PROHIBITED WASTES

In accordance with Rule .0505(10)(e), the transfer station will not accept barrels or drums unless they are empty and perforated sufficiently to ensure they contain no liquid or hazardous waste. In accordance with Rule .0505(11)(b), no hazardous or liquid waste shall be accepted at the transfer station. In addition, the transfer station will not accept infectious or regulated medical waste, bulk animal waste, or radioactive waste. A report shall be prepared for any attempted delivery of waste of which the transfer station is not permitted to receive, including from outside the permitted service area. The report will be forwarded to:

North Carolina Department of Environment and Natural Resources (NCDENR) Solid Waste Division P.O. Box 27687 Raleigh, NC 27611-7687 (919) 733-0692

SECTION 3.0 TRANSFER STATION OPERATIONS

3.1 BACKGROUND

The transfer station will be open to the public Monday through Friday from 6:00 a.m. to 6:00 p.m. and Saturdays from 7:00 a.m. to 1:00 p.m. It will be closed on Sundays and holidays designated by the City. A sign will be posted at the entrance identifying the hours of operation. The proper operation of the transfer station will require a sufficient number of trained personnel working in cooperation with each other.

Various types of mobile equipment will be required to operate the transfer station. The vehicles required include refuse transfer vehicles, front-end loaders, and tamping cranes. The City will be responsible for providing primary equipment, backup equipment, and equipment maintenance.

The transfer vehicles will be heavy duty "over the road" tractors with non-compacted type trailers geared for open-top loading. If so equipped, the refuse ejection system will be a pushblade type, chain-drag type, or live-bottom type. Should standard trailers be used, a tipper will need to be provided at the permitted MSW receiving landfill. The maintenance requirements and payload capacity will be the primary factors utilized in the selection of the transfer trailer.

The transfer station, utilizing two load-out hoppers, will require the use of a heavy duty, frontend loader (CAT 972G with a waste handling package or similar). The loader will push the refuse ejected onto the tipping floor into the load-out hopper. The loader will be a heavy-duty type and will have the capability to move a large quantity of refuse. The loader will be equipped with a waste-handling package. A wheeled tamping crane (CAT M312 or similar) will be utilized for refuse leveling operations and compacting waste into the trailers.

3.2 TIPPING FLOOR OPERATIONS

City and commercial haulers will deliver MSW to the transfer station each day during the designated hours. Upon arrival at the scale facility, the scale operator will determine the load characteristics and acceptability of the waste material being delivered. If the load is determined to be unacceptable, it will be rejected and directed to an appropriate disposal point. If required, notification will be given to the proper authorities for the handling of illegal or hazardous waste materials.

After the weighing process, the collection vehicles will be directed to the transfer station. Waste vehicles will be stopped at the entrance of the building by a station spotter and then directed to specific deposition areas on the tipping floor. It is the spotter's responsibility to queue the

W. 1977 in Amerikaan Can (1978-177) (1978). KOR - Transfer Station (RPORTS) Permit Application Circonstante Clauster Station Report dec

vehicles at the building entrance to keep the truck maneuvering area clear and provide a safe ingress and egress. Once the vehicle is in position and the waste has been inspected by the attendant, the load will be discharged directly onto the tipping floor. After dumping, the vehicles will exit the station. Vehicles not previously tared will be directed back to the scale facility to determine the weight of the empty vehicle.

Waste dumped on the tipping floor will be pushed with a front-end loader through the hoppers into the trailers in the lower load-out area. The lower level of the transfer station will have two drive-through areas for transfer trailer truck access. The open-top transfer trailer trucks pull into the drive-through areas and align themselves beneath the open pits. Once the trailer truck is in position, the operator will load and compact the waste into the transfer trailer. A mobile crane with a grapple bucket will be located behind the hoppers for use in leveling and tamping the loads in the trailers. Load-out scales will be used to determine when a trailer has been fully loaded. The loaded trailers will be moved to a staging area prior to departure for the disposal facility. The lower drive-through areas have been designed to provide sufficient space for drivers to exit their vehicles and walk to safety in the event of an emergency.

A separate tipping area outside of the transfer building has been included for "citizen" vehicles. This will reduce the interaction between citizen vehicles and the city/commercial vehicles during peak operating hours.

The transfer station has been designed with a 28,000-square foot tipping floor and a 13.5-foot high push wall that runs along the west side and a portion of the east side of the tipping floor. There are two open pits (33 feet long by 6 feet wide) located at the south end of the facility approximately 14 feet above the drive-through areas.

The number of trips per day of the transfer trailers is based on the throughput capacity of the transfer station and the haul time to the designated disposal site. In order to handle 900 tpd will require a minimum of 45 transfer trailer trips, assuming a transfer trailer payload of 20 tons. Given normal operation, 20 tractors and 25 trailers would be dedicated to this transfer station. Additional tractors and trailers will be available for backup purposes.

Solid waste will not be allowed to remain on the tipping floor overnight. Empty trailers will remain at the transfer station overnight, thus accommodating station requirements each morning and allowing scheduled flexibility with respect to station personnel and driver shifts to complete transfer operations and unloading at the end of each workday.

The tipping floor and drive-through areas will be washed down as needed throughout the day, as well as at the end of each operating day. The wash down water will be collected by trench drains

located on the upper level and driveway drains located in the drive-through areas on the lower level of the transfer station. This collection system should effectively maintain wash down water separate from stormwater. The wash down water will ultimately drain into a sanitary sewer line that connects to the gravity sewer main along Burnt Poplar Road.

SECTION 4.0

EROSION CONTROL AND STORMWATER REQUIREMENTS

4.1 EROSION AND SEDIMENT CONTROL

The erosion and sedimentation control features to be used during construction of the Facility will be prepared in general accordance with the North Carolina Erosion and Sediment Control Planning and Design Manual Guidelines (NC Design Manual). A separate "Erosion and Sediment Control Plan" will be submitted to the North Carolina Department of Environment and Natural Resources (NCDENR), Land Quality Section. The following erosion and sedimentation control measures are proposed for use during construction: silt fence, temporary diversion channels, temporary sediment traps, temporary construction entrance/exit, and vegetative stabilization (seeding).

4.1.1 Temporary Sediment Traps

The design of a temporary sediment trap is subject to several requirements. The temporary sediment trap must have an approximate sediment storage capacity of 1,800 cubic feet per acre of drainage and a surface area that is approximately one percent of the peak inflow. The design of the proposed temporary sediment traps was performed in general accordance with criteria from the NC Design Manual.

Two temporary sediment traps (TST Nos. 1 and 2) are proposed for the site, which are capable of passing the 10-year storm with a sediment storage capacity greater than 1,800 cubic feet per acre of drainage and a surface area settling efficiency greater than 75 percent.

4.1.2 Temporary Diversion Channels

Temporary diversion channels are to be installed to divert stormwater runoff into the appropriate temporary sediment trap. Drainage areas to a temporary diversion channel will be minimized as appropriate. The locations of the temporary diversion channels will change as site development proceeds. Temporary diversion channels may be installed in general accordance with the NC Design Manual Section 6.20.1.

4.1.3 Vegetative Stabilization

Vegetative stabilization shall be in accordance with the seeding schedule in the technical specifications provided in the Erosion Control Plan. The seeding schedule was prepared with reference to the NC Design Manual Sections 6.10 and 6.11 and seeding regimes used in the geographic location.

4.1.4 Silt Fence

Silt fence shall be installed at or outside the clearing limits as shown on the plans prior to land disturbing activity. Silt fence is an adequate runoff control measure, provided that less than one-quarter acre per 100 linear feet (LF) drains to it, according to the NC Design Manual Section 6.62.1.

4.1.5 Temporary Gravel Construction Entrance/Exit

According to the NC Design Manual Section 6.06.1, a temporary gravel construction entrance/exit is used to provide a buffer area for vehicles exiting the site to drop mud and sediment to avoid transporting it onto public roads. A construction entrance/exit will be installed on Chimney Rock Road. This entrance will be during construction until the primary entrance on Burnt Poplar Road is constructed.

4.2 STORMWATER CONTROL

During construction of the facility, the permanent stormwater control features will be installed. Stormwater runoff from the facility will be collected in either drop inlets or sheet flow into the on-site permanent stormwater pond. Reinforced concrete pipes (RCP) will divert the water collected in the drop inlets to the to the on-site permanent stormwater pond. Refer to Drawing C-04, Site Utility Plan, for the location of the stormwater conveyance system. All unpaved areas will vegetated or landscaped to minimize erosion.

SECTION 5.0 DRAINAGE CONTROL AND WATER PROTECTION REQUIREMENTS

In accordance with Rule .0505(7)(b) and (c), the transfer station will be operated so as to prevent water from coming in contact with MSW and to contain and properly discharge collected leachate (wash water).

The tipping floor of the transfer station is sloped away from the load-out hoppers and towards the trench drains located along the northern edge of the upper level concrete floor slab. The drains will collect any leachate (wash water) generated from washing the tipping floor. The trench drains connect to a sanitary sewer line, which travels outside the building along the upper level toward the northeast corner of the building. At the northeast corner of the building, the sewer line is tied to the on-site sanitary sewer system. The transfer station lower level contains the two drive-through areas for transfer trailer vehicles. Each drive-through area will have trench drains along the entire length to collect wash water. The drains connect to a sewer line that merges into the upper level sewer line. The combined (upper and lower) flows will travel via an 8-inch sewer line to a gravity sewer along Burnt Poplar Road.

The tipping floor and drive-through areas will be emptied and washed down at the end of each The upper level trench drains and the lower level driveway drains (or paved operating day. channels) shall properly collect any leachate generated; and, minimize areas of ponded water within the transfer station.

SECTION 6.0 DISEASE AND VECTOR CONTROL

In accordance with Rule .0505(12)(a), the City shall provide effective disease and vector control measures for the protection of human health and the environment. Disease vectors are defined as any rodent, flies, mosquitoes, or other animals, including insects, capable of transmitting disease to humans.

Control of disease vectors will be maintained by implementation of daily cleaning program, which involves removal of waste, leachate (wash water), and any ponded water from the facility operating areas. The removal of waste at the end of each operating day will protect against migration of vectors into and from the transfer station. The City may also utilize deodorizers, paint, and wash water to keep the tipping floor and drive-through areas clean and free from disease vectors. Stagnant ponded water shall be prevented from occurring to control mosquito breeding. If problems controlling disease vectors persist, the City shall employ a licensed exterminator to control vectors.

Since the transfer station is enclosed on all sides, wind blown trash should not be a major operational concern for the City. Any wind blown trash discovered at the end of an operating day shall be collected and stored in a transfer trailer or an on-site trash bin.

SECTION 7.0 SIGN AND SAFETY REQUIREMENTS

7.1 SIGN REQUIREMENTS

In accordance with Rule .0505(9), the City shall post signs at the Facility entrance indicating operational procedures, hours of operation, tipping fee, and permit number. Signs shall be clearly posted stating that no hazardous or liquid waste will be received. Traffic signs and markers shall be provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.

7.2 OPEN BURNING OF WASTE

In accordance with Rule .0505(10)(a), open burning of waste shall be prohibited at the transfer station.

7.3 FIRE PROTECTION EQUIPMENT

In accordance with Rule .0505(10)(b), equipment shall be provided to control accidental fires and arrangements made with the local fire protection agency to immediately provide fire-fighting services when needed. As required by building code, the transfer station building will be equipped with a fire suppression system, the appropriate number of fire extinguishers, and fire hydrants.

7.4 NOTIFICATION OF FIRE

In accordance with Rule .0505(10)(c), fires that occur at the transfer station require verbal notice to the NCDENR Division of Solid Waste within 24 hours and written notification shall be submitted within 15 days. Verbal and written notification shall be submitted to the Regional Waste Management Specialist:

North Carolina Department of Environment and Natural Resources (NCDENR) Solid Waste Section P.O. Box 27687 Raleigh, NC 27611-7687 (919) 733-0692

SECTION 8.0 ACCESS AND SECURITY REQUIREMENTS

8.1 TRANSFER STATION ACCESS AND SECURITY

In accordance with Rule .0505(8)(a), the transfer station must be secured by means of gates, chains, berms, fences, and other security measures approved by the NCDENR Division of Solid Waste Management to prevent unauthorized entry. All vehicles delivering waste to the transfer station will enter and exit through the access control gate on Burnt Poplar Road. Unauthorized vehicle access to the facility is prevented around the remaining portion of the transfer station by a chain link fence.

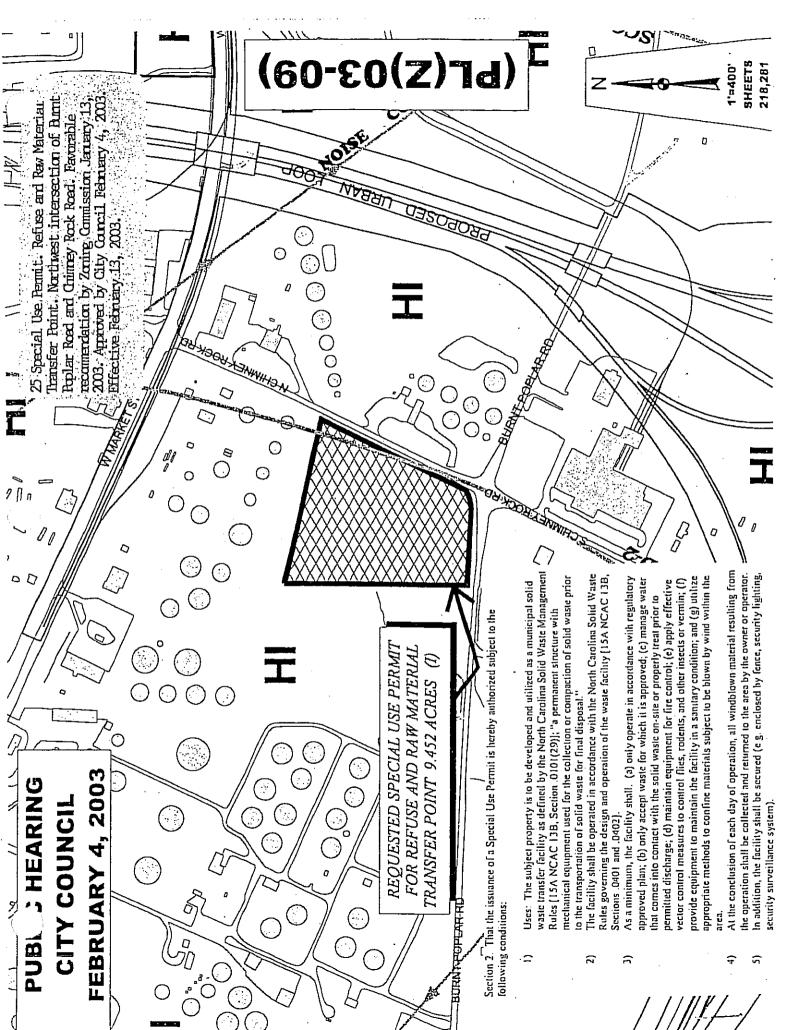
8.2 ATTENDANT

In accordance with Rule .0505(8)(b), the transfer station will have a full-time Scale Operator located in the scale house during operating hours. A transfer station attendant will be near the tipping floor area at all times during operating hours.

8.3 ACCESS ROAD

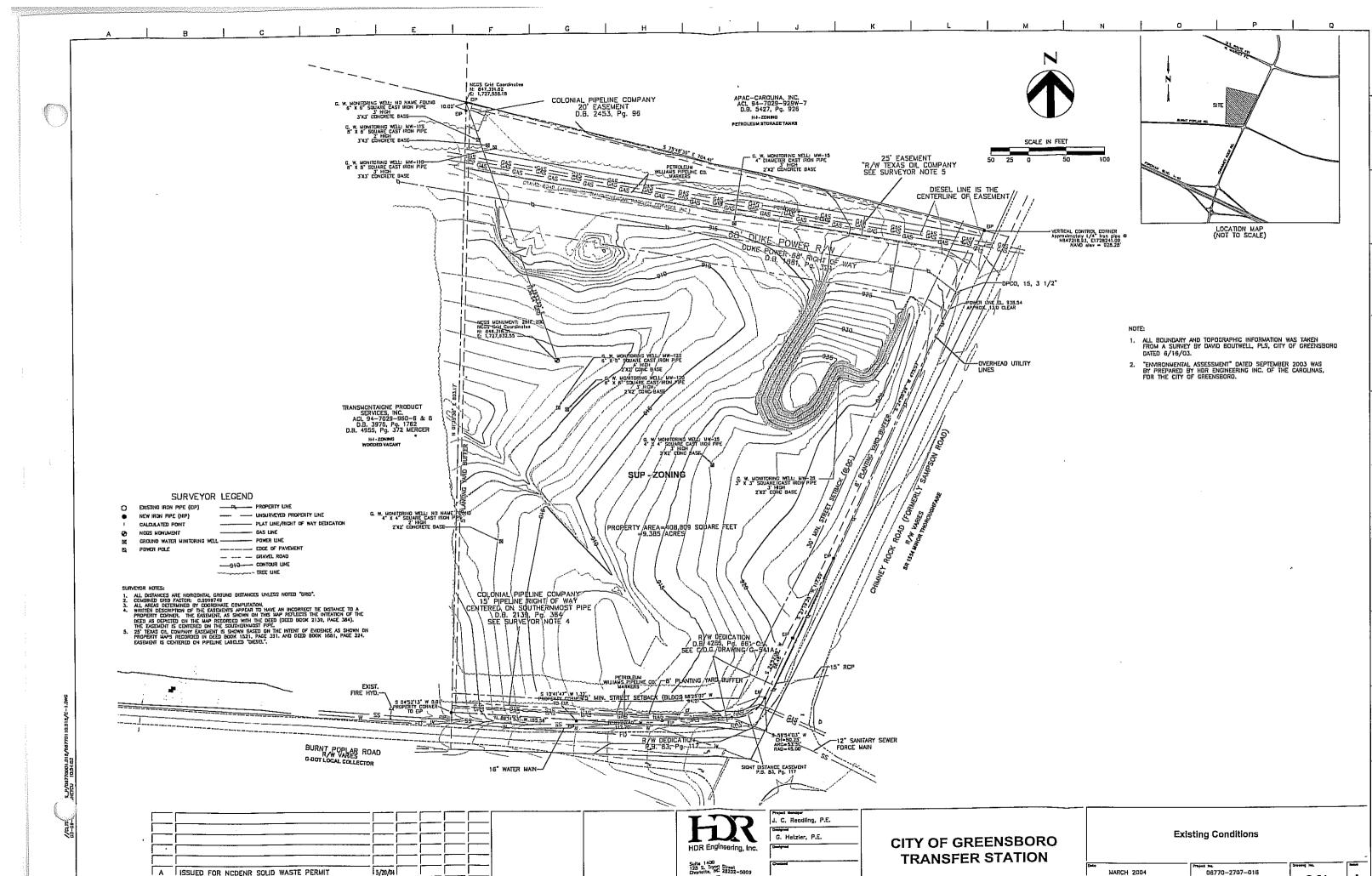
In accordance with Rule .0505(8)(c), the access roads for the transfer station will be constructed of an all-weather surface (asphalt or concrete) and shall be maintained in good condition. Potholes, ruts, and debris on the roads shall receive immediate attention in order to avoid damage to the vehicles. Access roads will be regraded as necessary to maintain positive slope for adequate drainage.

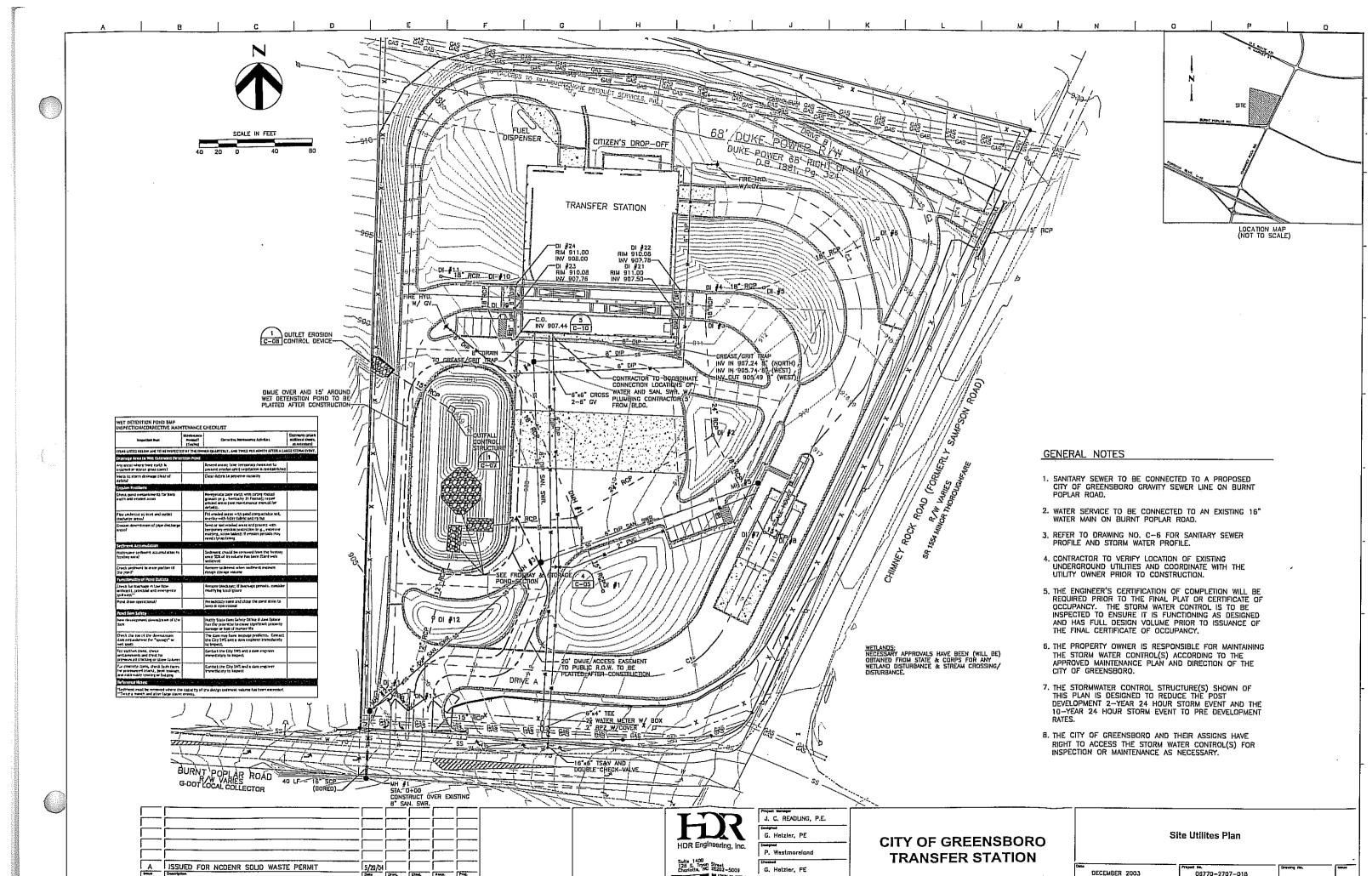
APPENDIX

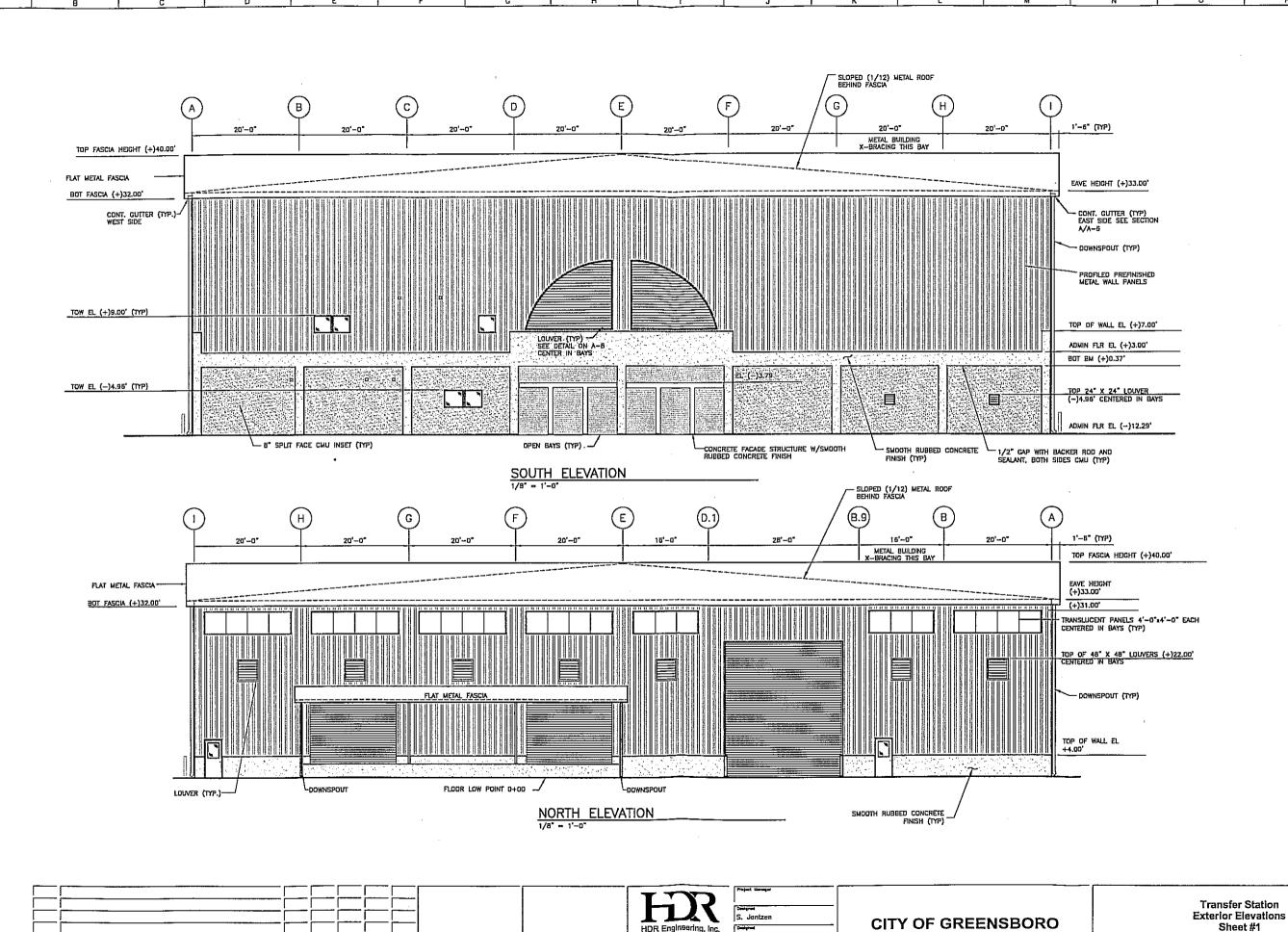


(____)

FACILITY DRAWINGS







Suite 1400 128 S. Tryon Street Charlotte, NG 28202-5009

5/20/04 DMP

ISSUED FOR NCDENR SOLID WASTE PERMIT

SWJ JCR

TRANSFER STATION

